

### REMARKS

Claims 17, 22 and 24-28 are pending in the present application. Reconsideration and withdrawal of the present rejection in view of the comments presented herein are respectfully requested.

#### Rejections under 35 U.S.C. § 103(a)

Claims 1, 3-5, 7, 12-18 and 22 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Fujishima et al. (US 6,239,231) in view of Hada et al. (WO 03/048863).

On pages 9-10 of the Office Action, the Examiner asserts that Comparative Test Example 3 in the declaration previously submitted is closest to Fujishima. The Examiner further indicated that the value of line width and the value for the difference between the target size and actual size for Test Example 2 in the declaration were very close to those obtained to Comparative Test Example 3, which represented the closest prior art. Because these differences were small, the Examiner did not accept that the declaration provided evidence of unexpected results. In order to directly address this concern of the Examiner, enclosed herewith is a Declaration under 37 C.F.R. § 1.132 of Tomoyuki Hirano which evaluates the solubility of polymers (A)-1 to (A)-4 and (A)-3' used in the experiments provided in the Declaration under 37 C.F.R. § 1.132 of Hideo Hada submitted on December 2, 2009.

As described on page 5 of the Hirano declaration, polymers (A)-1 to (A)-4 which satisfy the requirements of the resin component (A) defined in claim 1 could be dissolved in an organic solvent (C) after being allowed to stand for 4 days at room temperature. In contrast, polymer (A)-3' used in Comparative Test Example 3 of the Hada declaration could not be dissolved in the same component (C) in the same amount under the same conditions, requires excess filtration to produce a resist composition, and is therefore disadvantageous in practical use.

Because the polymer (A)-3 used in Comparative Test Example 3 required excess filtration which is disadvantageous for a resist composition, polymers (A)-1 to (A)-4, which were dissolvable in the organic solvent, exhibit unexpectedly beneficial properties compared to polymer (A)-3 used in Comparative Test Example 3 which, as noted by the Examiner, represents the Example that is closest to Fujishima et al. Thus, the claimed composition exhibits an unexpected advantage over the closest prior art in terms of solubility and freedom from a requirement for excess filtration.

Moreover, a thorough review of the original declaration reveals that the original Hada declaration does, in fact, show an unexpected advantage for the claimed composition. The Examiner is correct that a comparison of Test Example 2 (representing the claimed invention) with Comparative Test Example 3 (representing the closest example to Fujishima et al) does not reveal a substantial difference in the line width of the Iso pattern, and the difference between target size and actual size are similar between Test Example 2 and Comparative Test Example 3. However, the exposure dose required to obtain these results is about three times higher in Comparative Test Example 3 than in Test Example 2. Thus, a much lower exposure is required to produce the results of the claimed invention than in Fujishima et al. (as represented by Comparative Test Example 3) The lower dose is advantageous in terms of time-saving, as well as in avoiding the occurrence of problems that can arise with longer exposure.

Moreover, Test Example 3 of the Hada declaration, in which the same exposure dose is used as in Comparative Test Example 3, exhibits superior results in that the line width of the Iso pattern, and the difference between target size and actual size, are smaller in Test Example 3 than in Comparative Test Example 3. In fact, the difference between target size and actual size is about 50% less in Test Example 3 than in Comparative Test Example 3. Thus, when the same exposure dose is used, a significant and unexpected difference in results is obtained. Since Test Example 3 includes components (a1) to (a5), and Comparative Test Example 3 contains includes only components (a1) to (a4), these results further evidence the unexpected advantages of component (a5).

The foregoing results fully support Applicants' contention that a resist composition containing a polymer which includes all of the structural units (a1), (a2), (a3), (a4) and (a5) exhibit unexpected, advantageous lithography properties over resist compositions containing a polymer which lacks the structural unit (a4) or the structural unit (a5). These unexpected results could not have been predicted by one having ordinary skill in the art, even in view of the cited references. Accordingly, the results strongly support the nonobviousness of the present claims.

In view of the amendments and comments provided above, Applicants respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C. §103(a).

CONCLUSION

Applicants submit that all claims are in condition for allowance. Should there be any questions concerning this application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

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By: /Neil S. Bartfeld/  
Neil S. Bartfeld, Ph.D.  
Registration No. 39,901  
Agent of Record  
Customer No. 20,995  
(619) 235-8550

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091010